PATENT SPECIFICATION

779,053

Date of Application and filing Complete Specification: Oct. 28, 1953.

No. 29846/53.

Complete Specification Published: July 17, 1957.

Index at acceptance:—Classes 66, A(1B6: 1B7X: 2A: 2B: 4D: 6A: 6D); 93, D2D; and 128, B2, C(2B: 5B: 14).

International Classification:—A47g, j.

COMPLETE SPECIFICATION

Improvements in and relating to Laminated Articles made from Moulded Materials and Metal-Reinforced

We, WINIFRED MAY WALLER, a British Subject, and PAUL HENRY WALLER, a French Citizen, both of 28, Kingsfield Road, Oxhey, Watford, Hertfordshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to laminated articles in which non-metallic material, especially one of those now commonly known as plastics, is layered by moulding on sheet metal material (hereinafter respectively termed "the moulded material" and "the metal part"). Such articles are hereinafter termed "laminated articles of the kind described." The present invention more particularly, but not exclusively, concerns table articles such as plates, saucers, trays and table mats and articles of hollowware such as cups, dishes, bottles, jars, basins and vases.

The main object of the invention is to provide such articles with attractive, ornamental or patterned surfaces, i.e., to utilise the metal part in such manner as to co-operate with the moulded material in improving the appearance of the articles.

To the foregoing end the present invention comprises a laminated article of the kind described wherein the metal part is a structure pre-formed with raised areas and with apertures or recesses and the moulded material has been moulded as a connected whole in contact with opposite faces of the metal part and into the apertures or recesses so that surface areas thereof are exposed flush with the moulded material and the latter and the exposed areas of the metal part combine to give inlay effects on at least one face.

The metal part may have one or more raised areas on each side of an integral embedded foundation layer. It may have apertures through which the moulded material has flowed to connect opposing layers.

By varying the formation of the metal part a variety of ornamental or patterned or inlaid effects can be produced in the surfaces. Articles according to the invention of the kind described give rise to other advantages as against those made from plastics alone. Articles so made or made from papier mache are well known, but they are not always favoured since they feel unduly light in weight when held and are in many cases distorted either from handling or, where intended to hold hot liquids, by the heat of the contained material. The metal part according to this invention will generally desirably increase the weight and obviate or lessen such distortion, apart from making the articles more attractive, and this increased weight effect may be enhanced by forming the metal part with an imperforate area or areas. For example such an area may form a rim or mouth or spout to a vessel (if desired so as to avoid the lips coming in contact with the plastic material in the case of a drinking vessel). The metal part may also comprise a carrying handle in the case of certain articles such as drinking vessels or vases.

The metal part may be made from any suitable metal or alloy such as gold, silver, nickel-silver, and electro-plated metals.

By way of example, according to one way of carrying out the invention, the metal part is preformed to the general shape of the desired article, e.g. a drinking vessel such as a cup or tumbler, and with apertures or recesses and placed in a mould. Moulding may be by compression-moulding or injection-moulding or other methods, e.g. of a plastic of the polyvinyl or polythene series. After being moulded and removed from the mould, the article may be subjected to grinding or polishing to remove any excess of the moulded material and if desired a surface film of the metal so that in the finished product the ex-

posed surface of the moulded material which has penetrated into the preformed spaces and apertures is polished flush with the exposed surfaces of the metal part to give the desired inlay effect.

A finished article of hollowware may thus be produced which is not only of pleasing appearance but is strong and capable of withstanding rough usage, resistant to distortion, easily washable and well suited for use in public places or on board ship.

The metal part can be arranged to form the mouthpiece or mouth rim of such an article. For example one area thereof, e.g. an imperforate area, may be screw-threaded to form the mouth of a bottle, jar or flask to receive a screw-closure cap. By this means the mouth of the vessel may be strengthened and made more resistant to distortion which is usually associated with open vessels of plastic alone. Hip-pocket flasks and petrol containers, e.g. for filling pyrophoric lighters, may advantageously be so constructed.

The accompanying drawings illustrate by way of example several forms of laminated article according to the invention.

Fig. 1 is an elevation of a part of a laminated article according to the invention in which the metal part is provided with raised areas on both sides and with flow holes for the moulded material.

Fig. 2 is a plan view thereof from one face.

Fig. 3 is a sectional view of a variant and Fig. 4 a face view thereof.

Fig. 5 shows a cup made according to the invention.

Fig. 6 is a face view from one side and Fig. 7 a face view from the other side of another form of laminated article. Figs. 8, 9, 10 and 11 are sectional elevations taken on the lines 15—15, 16—16, 17—17 and 18—18 of Figs. 6 and 7 respectively.

Figs. 1 and 2 show a part of a laminated article where the foundation layer 6 of the metal part is embedded in the plastic material 5b and has raised areas 7 at each side and flow holes 8. The raised areas may be apertured at 9 if desired. The plastic is moulded so that it fills the space within and around the raised areas and the flow holes and therefore forms a connected whole, with the moulded material and the metal part exposed and giving the desired flush surface inlay effect on both sides. The moulded material may form, as shown, a covering for the metal part, save where the raised areas are exposed, and the effect of metal inlaid into plastic is thereby enhanced.

Figs. 3 and 4 show a part of a laminated article showing a different design, but otherwise following the principle of construction shown in Figs. 1 and 2. Different designs may be produced on opposite sides of the same article. Obviously varied pattern effects may be obtained by appropriate shaping of the raised areas or of the apertures therein or of both.

Fig. 5 shows a cup constructed with a metal part having raised areas and flow holes.

Figs. 6—11 show how different patterns may be formed at each side of a laminated article. The foundation layer 6a of the metal part is embedded in the moulded material and has raised areas 7a at one side and raised areas 7b at the other side suitably apertured, e.g. as shown. The moulded material may completely surround the marginal edge of the metal part and spread over the whole of the embedded part of the metal.

What we claim is: —

1. A laminated article of the kind described wherein the metal part is a structure preformed with raised areas and with apertures or recesses and the moulded material has been moulded as a connected whole in contact with opposite faces of the metal part and into the apertures or recesses so that surface areas thereof are exposed flush with the moulded material and the latter and the exposed areas of the metal part combine to give inlay effects on at least one face.

2. A laminated article according to claim 1 in which the metal part has one or more exposed raised areas on each side of an integral embedded foundation layer.

3. A laminated article according to claim 1 or 2 in which the metal part has apertures through which the moulded material has flowed to connect opposing layers.

4. A laminated article according to any of the preceding claims in which excess moulded material (and if desired a surface film of the metal) has been removed, e.g., by grinding or polishing.

5. A laminated article according to any preceding claim in the form of an article of hollowware with the metal part shaped substantially in the shape of the article.

6. An article of hollowware according to claim 5 in which the metal part forms the mouth or rim thereof.

7. An article of hollowware according to claim 5 or 6 in the form of a bottle, jar, or flask in which the metal part is screw-threaded to receive a screw-closure cap.

8. A laminated article according to any one of claims 1 to 4 in the form of a plate or table mat.

9. A laminated article substantially as herein described and illustrated with reference to Figs. 1 or 2 and 3 or 3 or 4 of the accompanying drawings.

10. A cup substantially as herein described with reference to and as illustrated in Fig. 5 of the accompanying drawings.

11. A laminated article substantially as herein described with reference to and as illustrated in Figs. 6 to 11 of the accompanying drawings.

HYDE & HEIDE,
2 Broad Street, Buildings, Liverpool Street,
London, E.C.2,
Patent Agents for the Applicants.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1957.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

779053
1 SHEET

PROVISIONAL SPECIFICATION

This drawing is a reproduction of the Original on a reduced scale

FIG.1

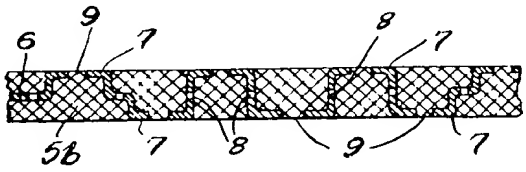


FIG.2

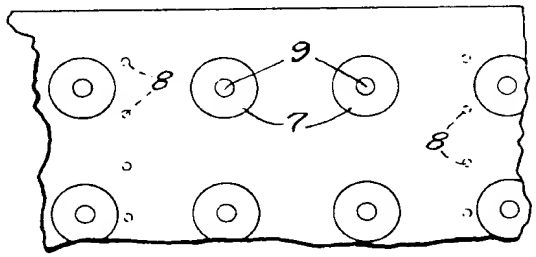


FIG.3

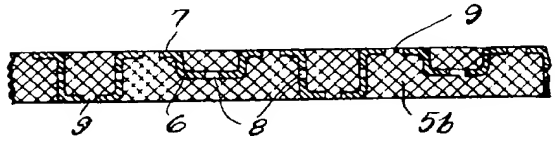


FIG.4

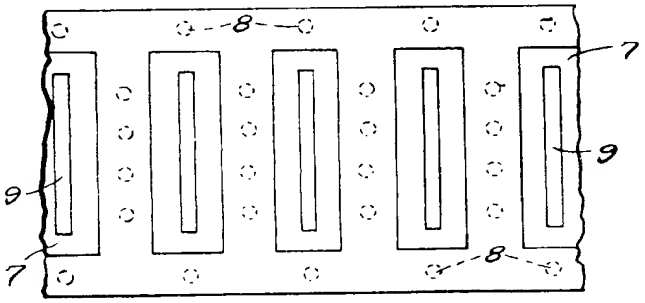
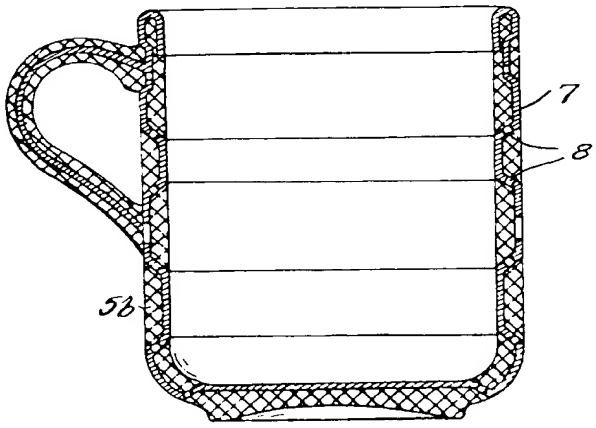


FIG.5



779053 COMPLETE SPECIFICATION
1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

FIG. 8.

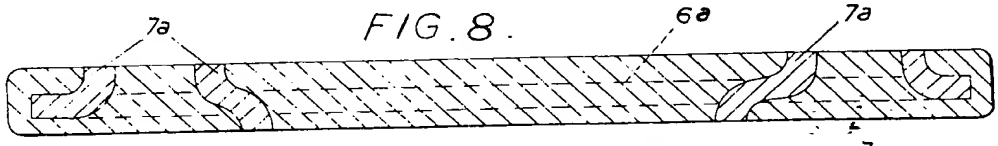


FIG. 9.

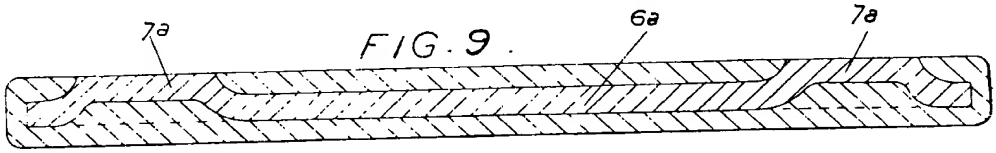


FIG. 10.

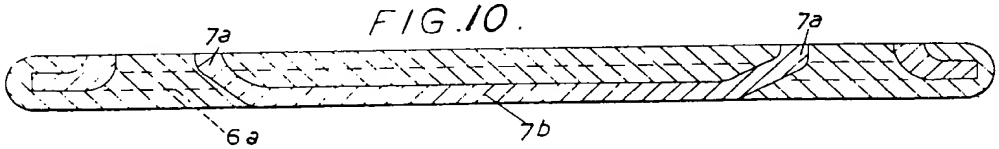


FIG. 6.

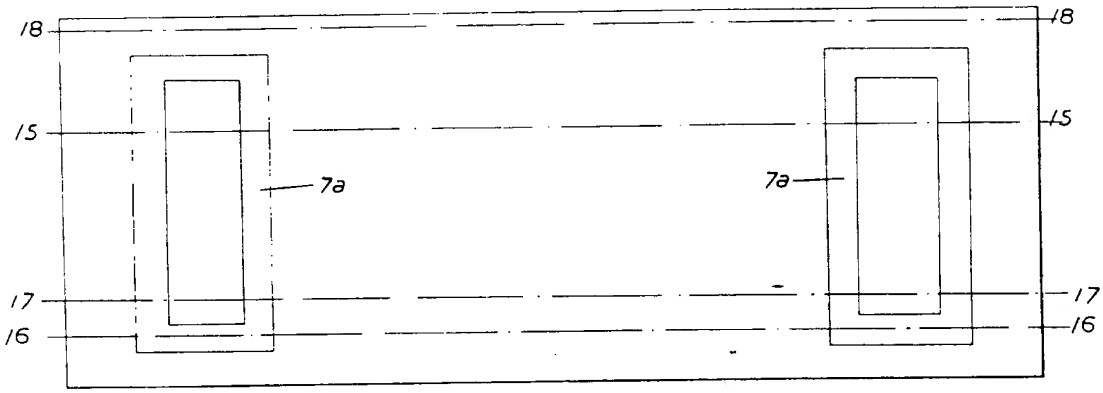


FIG. 11.

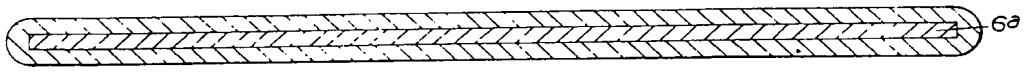


FIG 7